THE RESPONSE TO A DILEMMA: INTERNET ADDICTION IS CAPABLE IN TECHNOLOGY ADOPTION FACTORS OR STEREOTYPE BEHAVIOR?

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ABSTRACT: Introduction: Internet addiction is increasing as a psycho physiological disorder with symptoms of tolerance and withdrawal symptoms, emotional disorders and social dysfunction among internet users. The purpose of this study is to answer the question of whether Internet addicts have more technology competence and capabilities or stereotype behavior. Methods and materials: This is a cross-sectional study conducted on 245 students of the Jahrom University of Medical Sciences through random cluster sampling. Data collection was carried out through a three-part questionnaire in which the first part contained demographic questions, the second part internet addiction, and the third part a comprehensive questionnaire to measure technology adoption factors, including (internet self-efficacy, the attitude toward internet and motivation to internet). Data were analyzed using descriptive statistics to examine the distribution and analytical statistics such as Student T-Test and ANOVA were used to compare the mean in various groups. Results: The results indicated that the level of addiction is 7.8% among students. Most of the students reported their technology efficacy in average level. Also, there was no significant difference between the individuals’ efficacy in elements of technology adoption in both groups of addicted to internet and normal group. Conclusion: Considering the results and lack of capability of students with internet addicts in technology adoption factors, it is suggested that appropriate training and substrate regarding proper and effective use this technology is prepared.

Keywords: Internet Addiction, College Students, Attitude toward Internet, Internet Self-Efficacy, Internet Motivation.

INTRODUCTION
Internet is one of the latest and most advanced human achievements which involve a vast and borderless network of various connections and its emergence dates back to late 1960s and early 1970s. Nowadays, a large number of interactions are carried out through internet which has attracted a large audience with its attractive atmosphere, amazing and full of excitement, such as chat rooms, email, and virtual environments with multiple users (1). Internet addiction refers to wide range of behavioral problems and motivation control for using internet. Internet addiction is defined as a compulsive behavior, or wish to establish a connection, or maybe even a manifestation of the transmission or reflection of personal relationships meets the needs (2). In the other words “internet addiction is defined as sick-like and compulsive use of internet in which tolerance, isolation are its symptoms” (3).

Internet addiction is a phenomenon that has three features. First, it is a kind of compulsive disorder in which some of its features are like pathological and in fact, it can be said that the person is suffering from Internet addiction which has symptoms such as early fatigue, loneliness, and depression. Individuals such as Treatment for this type of addiction is cognitive behavioral and motivational enhancement therapy. The second feature of internet addiction is a sort of mental disorder. From this perspective, new research entitled “internet psychotherapy” has emerged. This view sees the internet addict as a patient (2).
The last edition of diagnostic and statistical manual of mental disorders which provides standards for the classification of mental illness, no classification for internet addiction has been introduced. However, the previous studies indicate that the criterion for the internet addiction overlaps diagnostic criterion for “impulse control disorder”, sickness-like gambling”, dependence on drugs (based on diagnostic and statistical manual of psychological disorder) and applications of these criteria have been used in many studies (4-5).

There are more than 528.1 million internet users with 37.7% penetration all over the world (6). According to the Ministry of Communications and Information Technology, the number of Internet users is constantly increasing. Between the years of 2000 and 2006 the number of internet users in Iran has risen more than 31 percent. In 2006, more than 11.5 million people and in 2011, 10 million people have been reported to use internet (2).

In computer literature and the technology adoption model, the concept of self-efficacy generally and motivation to advancement related to internet have been considered. Self-efficacy and attitudes are considered to be the main issues in the field of Information Technology which provide appropriate and correct context for using information technology(7). Self-efficacy is a constructive potent through which cognitive, social, emotional, and behavioral skills of human to reach various purposes are organized effectively (8).

Achievement is also a tendency to surpass the others to progress according to specific criteria and to strive for success (9).

Internet users also have different motivation and higher improvement could possibly lead to an increase in hours of Internet use. The term motivation is a progress factor which is necessary to enhance learning from the viewpoint of some scholars. Progress is defined as the power to do things well to high standards and the studies demonstrate that motivation is an effective factor in every type of learning such as online environment (10).

Joiner et al. found that sex differences in Internet use have an effect (in favor of men). There is a significant relationship between Internet anxiety (negative) and Internet identification (positive) in using the Internet (11). Others concluded that the more time young people spend on internet, the less time they spend in real social environment. In addition, the young Internet addicts, like other addicts, suffer from symptoms of addiction. Men addictive activities are generally aggressive games, sex chat and cybersex, and women addictive activities generally constitute protectionist friendships, dating or complaining from husbands in chat rooms (12).

Since internet addict users have more experience in using internet, the relationship between experience and attitude toward internet have been investigated in the studies. So that Tsai & Lin. designed and validated a questionnaire concerning user’s attitudes to internet in four major areas (sense of usefulness, sense of control over use, affective, and behavioral) and found that there is a significant relationship between “experience of using internet” and “attitude toward internet” (13).

Considering the fact that the use of Internet and technology in Iran does not have a long history, it has its own place, especially among young people. And with regard to carried out studies in the field of internet addiction inside and outside Iran, as well as adverse affect of this problem on various aspects of life, it seems obligatory to examine internet addiction in Iranian society and influencing factors on internet addiction from different viewpoints. In addition, since self efficacy and attitude toward internet and progress motivation considers as important components of technology adoption and information literacy, the investigator decided to examine abovementioned factors in impaired people. The results of this study will be reviewed with the aim of identifying internet addiction and its components, and also to exploring the capabilities of the technology adoption in the students whether there is any connection between internet addiction and attitude and students’ self efficacy toward internet. In other words, do people with excessive use of internet have more effective efficacy in internet use? The aim of this study is to investigate Internet Addiction are capable in technology adoption factors or stereotype behavior?.

MATERIALS AND METHODS
This is cross-sectional study carried out on 245 students in all various groups of Jahrom University of Medical Sciences. The population were all Jahrom college students and then a three part questionnaire including demographic information (field of study, age, sex), Young’s internet Addiction Test and a comprehensive questionnaire to examine technology adoption factors in three parts including (internet self efficacy, internet attitude, and internet motivation). Distributing questionnaire, the internet addiction questionnaire and its component on the one hand and then students’ capability in technology adoption factors were investigated. Participant divided in two parts with internet addiction and normal people and self-efficacy level, internet attitudes and motivation toward internet (technology adoption factors) in two groups were compared.
Young’s internet Addiction Test constructed by Kimberly Young is the most valid questionnaire in the field of internet addiction. This 20 items questionnaire is self run, and scored by Likert method. The predicates of this test have been designed to determine gambling DSM-IV-TR based on pathological criteria. Based on obtained scores subjects are classified into three groups: 1- normal internet user 2- the user suffers from a myriad of problem due to overuse 3- addict user who is dependent due to overuse and needs treatment. The questionnaire evaluates various dimension of addiction to internet and discusses to determine whether excessive use of internet influence various aspects of life. 5 elements such as social problems, the effect on performance, lack of control, excessive use of chat rooms, neglecting occupational and academic duties were extracted for the questionnaire. Content and convergent validity, retest (r=0.82), internal consistency (α = 0.88), and split half (r= 0.72) were calculate. The best cut off point was calculated 46 (14).

The questionnaire is the standard of internet attitude which has been designed to examine three important elements of internet attitude, internet self efficacy, and then internet motivation with 42 questions. In this questionnaire, 18 items related to internet self efficacy,17 items related to attitude to internet. and motivation progress was designed with 6 items. Item in a five part spectrum was examined. Reliability of the research instruments was good and reliability for all parts were reported (0.80). This parameter for internet general self efficacy 0.96, internet attitude 0.94, and motivation to internet 0.95 were reported(17). In the current study, the reliability for internet self efficacy (0.84), internet attitude (0.74), internet and motivation to internet was calculated (0.86).

RESULTS
The results indicated that 56.3% of the students were girls and 43.6% were boys. Most of the students, 79.3% were in age range of 20-25. Examining the internet addiction rate, it was found that the internet addiction rate is 7.8% and the rest were normal users. Examining other results of the study, the users status were determined as following so that the scores (20-49) indicated normal user, (50-79) slight addiction, and (80-100) severe addiction. The other data indicated that the majority of the students with 89.8% were normal user, 8.2% had slight addiction, and only 2% severe addiction. The results have been specified in (Table 1).

The results also showed that there is a significant difference between internet addiction rates in terms of sex so that the average among men is higher than women. (Table 2)

In addition, the results showed that there is a significant differences between internet addiction in terms of fields the two elements of excessive use of chat rooms and losing control among various fields (table 3).

The rate of technology adoption factors confirms that the vast majority of the people evaluated their capabilities average in all three related elements (Table 4).

Other results showed that despite the higher mean of internet self efficacy in addicted group ,but there are no differences in means between the two groups (Normal and addict )(p>0.05).

Table 5 confirms that there is no significant difference between self-efficacy, attitude and motivation in people with internet addiction and normal people. The mean of general self-efficacy of the students with more internet addiction was even lower in the two other elements.

DISCUSSION
The results of this study showed that the internet addiction group of students had a weak level. But from the Yung’s viewpoint, the addict is a person who spends at least 38 hours in a week or 8 hours a day in cyberspace (18). The results of the study of Mohseni Tabrizi et al. confirm these results that the mean of hours for internet use was 14-17 in a week. 29% of the users were internet addict and all of them indicated various degrees of weakness and disability in carrying out the routines, social isolation, loneliness, and lack of willingness for interpersonal relationship and interaction slightly (19). Some research in addition confirmed the results of the present study and pointed out the low levels of internet addiction in students as their male dominance. In another study of mostly male students (30%) more than 8 hours on average and mostly female students (29%) spent their time with internet 2-4 hours a week. Majority of the students of the Isfahan University, University of Medical Sciences (22% and 27% respectively) were associated with internet (16).The result of a study carried out on internet users in Shahin Shahr indicated that 4 (3.2%) scored above 80, and were classified as severe addicts; 46 (27.05%) had moderate addiction; 120 (70.58) scored lower than 50 and were normal users. The results of the current study confirm high percentage of slight addiction in majority of studies. Another study carried out in
Tehran to investigate internet addiction prevalence and comparing psychological disorder reported disorder prevalence 3.2% (21).

In another study conducted by Ayzanloo and Goudarzi over examining the internet addiction and its relationship with users’ social problems determined that 77.2% of people suffer from mild addiction and only 3.6% suffer from severe addiction. The results of this study are consistent with the present study concerning severity of internet addiction. And also in the abovementioned study the mean score in boys was higher than in girls (70.1% for boys versus 29.9 for girls) but there was no significant difference between the two groups in the study in which the results were reported in the present study, but the differences between the two groups in the present study was significant (22).

Various studies conducted in different countries demonstrated different rates of internet addiction. In the United States and Europe, the incidence was determined to be 1.5% to 8.2%, and in a telephone survey on users in the general population of the United States, it was reported 0.3% to 0.7% (23).

In Hong Kong, the prevalence of internet addiction in groups of 12 and 13 years old in the field of technology and its related problems has been investigated. In the first group, this rate reached to 26.4% in the second group the rate reached 26.7% respectively (25).

A study carried out on 371 English students indicated that this statistics reaches 18.3% and is associated with disorder in mental health. Another study conducted with 3616 Thai students confirms this fact that internet addiction prevalence vary from 14.1 to 16.5 (27).

Rate of internet use and addiction rate were reported 88% and 2.4% respectively in China (28). This rate was reported 4.2% in other Asian countries and Lebanon and entertainment and advertisement use were more than research and scientific use (29).

In Japan, slight internet addiction was reported 33.7% and 6.1% for severe addiction. It was 1.8% in women and 24.6 in men (30).

Additional results showed that there is a significant difference in the rate of internet addiction and its components according to sex and field of study. However, research conducted in Hong Kong showed that there is no significant difference between internet addiction, age, gender, economic status and immigration (31).

But some showed that internet addiction associated with problems in men was 19.4% and in women 1.5% and gender (in favor of males) was a predictor factor of internet addiction (32). And finally, some evidence suggests that the rate of psychiatric disorders associated with internet addiction is higher in men than women. In the present study, the overall mean of internet addiction and its associated components was higher in this group (33).

Self-efficacy-attitude and internet progress motivation in students were reported moderate in the present study. There was no difference in the ability of students in terms of sex field of study. The results of this study correspond with the results of other investigations.

And similarly, participants of Isfahan University and the University of Medical Sciences expressed their attitude levels high towards internet (55 percent and 54 percent, respectively). Overall, participants expressed their attitude high towards the internet (54%).

Male and female participants evaluated their internet self-efficacy similarly high (respectively 38% and 40%) (18).

In the present study, there was no sex difference in the attitude and efficiency of students. Some investigations have reported the same results (16). The research findings on gender groups (men and women) are in line with research findings of Tsai, and Sam et al. (35, 34).

However, some studies, unlike the present study express a significant relationship between the two sexes in internet self-efficacy and attitudes. Many studies have shown that men have more positive attitudes than women. Also, in some research, social attitudes toward internet in men are higher than in women. In some of the studies, significant differences in attitudes between men and women on the internet have been reported (15, 36, 37, 38).

The attitude toward internet was moderate in the present study. Some studies expressed this interest higher so that Azarnia found in the application of internet among the youth in Mashhad that 60.9% of internet users had very high interest, 35.8% average and 3.4% showed low and very low level of interest in the internet use (39).

Another part of the research is interested to investigate the relationships between the main variables. Data indicate that there is a significant relationship between individual variables of internet self-efficacy and “attitude toward using the internet, and statistically, the abovementioned relationships are valid. Findings of research indicate that the more experience in using the internet, and more positive and optimal attitudes toward the Internet will be (43-40).
However, contrary to the results presented in this study no link was reported between excessive use of the internet and technology adoption factors including the higher attitude toward the internet. The relationship between age and attitudes toward the internet in the present study was significant. Zhang findings also indicate that there is a significant relationship between “age” and “attitude” toward the internet (15). The results of the study of Koufteros and Dinev, showed that the higher the experience in using the internet is, the higher the self efficacy on one hand, and the higher the attitude rate to internet on the other hand will be (44). But the results of the present study point out that despite the higher general self-efficacy in internet addict users; the attitude rate is not higher. Iran is ranked 87th among 178 countries in the world. Based on international telecommunication union category, Iran is among the countries with moderate internet use and among internet users, the youth have the most use (45). Finally, this study found that the use of interactive technologies has a strong negative effect on the academic achievement of students and has a reverse relationship with learning and academic achievement (46).

**CONCLUSION**

The results of the present study indicate that although internet addiction rate is low, it can lead to individual disorder function in various dimensions. It is worth noting that using internet excessively does not mean more mastery and efficacy in the internet technology and does not necessarily create more progress motivation. Therefore, considering the development of technology, it is necessary to pay more attention to the cultural context of its use and the proper use of the different levels of education.

**APPENDIX**

<table>
<thead>
<tr>
<th>severity of internet addiction</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal user</td>
<td>220(89.8)</td>
</tr>
<tr>
<td>Moderate addiction with dysfunction and loss of control</td>
<td>20(8.2)</td>
</tr>
<tr>
<td>Severe function impairment</td>
<td>5(2)</td>
</tr>
<tr>
<td>Total</td>
<td>245(100)</td>
</tr>
</tbody>
</table>

Table 2: Internet addiction subcategories based on sex
<table>
<thead>
<tr>
<th>Factors</th>
<th>Field of study</th>
<th>Average</th>
<th>SD</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neglecting occupational and educational status</td>
<td>Medical</td>
<td>4.45</td>
<td>1.72</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>4.1</td>
<td>1.41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td>3.91</td>
<td>1.20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td>4</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anesthesia</td>
<td>4.36</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laboratory Sciences</td>
<td>4.5</td>
<td>1.12</td>
<td></td>
</tr>
<tr>
<td>Excessive use of chatrooms</td>
<td>Medical</td>
<td>5.20</td>
<td>2.27</td>
<td>0.0001</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>4.28</td>
<td>1.41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td>3.36</td>
<td>1.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td>3.62</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anesthesia</td>
<td>4.30</td>
<td>1.74</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laboratory Sciences</td>
<td>4.15</td>
<td>1.21</td>
<td></td>
</tr>
<tr>
<td>Losing control</td>
<td>Medical</td>
<td>11.56</td>
<td>4.42</td>
<td>0.01</td>
</tr>
<tr>
<td>Performance dysfunction</td>
<td>Medical</td>
<td>8.17</td>
<td>3.18</td>
<td>0.06</td>
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<td>------------------------</td>
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</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>7.33</td>
<td>3.39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td>6.66</td>
<td>3.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td>6.26</td>
<td>1.76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anesthesia</td>
<td>7.78</td>
<td>3.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laboratory sciences</td>
<td>8.15</td>
<td>2.87</td>
<td></td>
</tr>
<tr>
<td>Social problems</td>
<td>Medical</td>
<td>12.17</td>
<td>4.75</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>11.47</td>
<td>4.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td>11.12</td>
<td>5.36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td>9.21</td>
<td>1.56</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anesthesia</td>
<td>11.30</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laboratory sciences</td>
<td>10.84</td>
<td>3.20</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Level of technology adoption factors in students

<table>
<thead>
<tr>
<th>self efficacy to the internet Frequency (percent)</th>
<th>attitude to the internet Frequency (percent)</th>
<th>Internet motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weak 83(4)</td>
<td>weak 46.6)75 (</td>
<td>weak 76 (28.4)</td>
</tr>
<tr>
<td>Average 5.58)143(</td>
<td>average 85(52.8)</td>
<td>average 121(45/1)</td>
</tr>
<tr>
<td>Strong 19 (7.75)</td>
<td>strong 3)0.63 (</td>
<td>strong 36.5)71 (</td>
</tr>
<tr>
<td>Total 245(100)</td>
<td>total 245(100)</td>
<td>total 245(100)</td>
</tr>
</tbody>
</table>

Table 5: Mean difference of technology adoption factors in two student groups (normal and addict)

<table>
<thead>
<tr>
<th>Normal Group</th>
<th>Addict Group</th>
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</thead>
<tbody>
<tr>
<td></td>
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</table>
REFERENCES


[8] Zaki MA. Experimental test models of how the use of information technology. Proceedings from The Third International Conference on Management • Sharif University • January. 2005. [In persion]


[17] Zaki MA. Validation of students’ attitudes toward the Internet in Esfahan Univer-sity of Medical Sciences. Journal of Information Science and Technology 2006; 22(1): 59-29. [In persion]


[38] Wu Y T, Tsai C C. University students' Internet attitudes and Internet self-efficacy: a study at three universities in Taiwan. CyberPsychology & behavior. 2006; 9(4): 441-450.

[39] Azarnia R. Internet use among Mashhad youth. The center of assessing student opinion, the Cultural Affairs Branch of Mashhad. 2004


